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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,585	02/19/2004	Herve Marche	034299-567	7714

7590 09/30/2008

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EXAMINER	
GARCIA, ERNESTO	
ART UNIT	PAPER NUMBER
3679	

MAIL DATE	DELIVERY MODE
09/30/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/783,585	MARCHE, HERVE	
	Examiner	Art Unit	
	ERNESTO GARCIA	3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 July 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *5,7-11,15 and 19-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5,7-11,15 and 19-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The indicated allowability of claims 4 (now claim 19), 15, and 20-22 is withdrawn in view of the newly discovered reference to Sugimaya et al., 4,2726,603. Rejections based on the newly cited reference follow.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Objections

Claims 21 and 23 are objected to because of the following informalities:

regarding claim 21, "part" in line 9 should be --parts--; and,

regarding claim 23, a comma should be inserted after "first axis" in line 10. Appropriate correction is required. For purposes of examining the instant invention, the examiner has assumed these corrections have been made.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 5, 7-11, 15, 19, and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention and incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the second circular member, the two plates, and the spherical surfaces. Note that the claim does not set forth where the second circular member is located with respect to the other elements and what contains the spherical surfaces.

Regarding claims 5, 7-11, 15, and 24, the claims depend from claim 19 and therefore are indefinite.

Claims 5, 15, and 21 are further indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 5, the recitation "internal spherical surfaces" and "external spherical surfaces", in line 3, makes unclear whether these are different spherical surfaces than those recited in claim 19, line 8, or the same spherical surfaces. The recitation "internal spherical surfaces" in line 3 makes unclear where the internal spherical surfaces are located. The recitation "external surfaces of the two plates" in

lines 3-4 is misdescriptive and/or inaccurate since the external spherical surfaces are on the second circular members.

Regarding claim 15, the recitation "a spherical outer surface" in line 2 makes unclear whether this is another spherical surface than that recited in claim 19, line 8, or the same spherical surface.

Regarding claim 21, the recitation "external spherical surfaces of the first parts" in line 17 makes unclear whether these are different spherical surfaces than those recited in line 13 or the same spherical surfaces.

Claim Rejections - 35 USC § 103

Claims 7-10, 15, 19, 20, 22, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshioka, 4,026,572, in view of Sugiyama et al., 4,726,603.

Regarding claim 19, Yoshioka discloses, in Figure 31, an assembly comprising a load bearing structure **4**, a suspended structure **8**, and a coupling member **3a**. The load bearing structure **5** has a first circular member **4f**. The first circular member **4f** is able to rotate about a horizontally oriented first axis **A1**. The first circular member **4f** has a first aperture **4fd**. The suspended structure **8** has a second circular member **4j** is able to rotate about a horizontally oriented second axis **A2**. The second circular member **4j**

has a second aperture **4jd**. The suspended structure **8** further comprises two plates **2** parallel to each other between which the load bearing structure **4** is placed. Each of the two plates of the suspended structure cooperates with the load bearing structure through spherical surfaces (col. 22, lines 8-11). The coupling member **3a** is received in the first aperture **4fd** and the second aperture **4jd**. The coupling member **3a** is oriented along a third axis parallel and adjacent to the first axis **A1** and the second axis **A2**. However, Yoshioka fails to disclose rotation prevention means provided between the coupling member **3a** and each of the first and second circular members **4f**, **4j** to prevent any relative rotation therebetween.

Sugiyama et al. teach, in Figure 3, rotation prevention means provided between a first circular member **64** and second circular members **48**, **50** to prevent a coupling member **54** from rotating relative to the second circular member **48**, **50** (col. 3, lines 28-32) and to have the coupling member **54** rotate integrally with a first member **64** (col. 3, lines 56-59). Therefore, as taught by Sugiyama et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide rotation prevention means between the first circular member and the second circular members so that the second circular member and the first circular member rotate integrally with the coupling member. Given the modification, the first circular member **4f** and the second circular member **4j** would have been unable to rotate with respect one another about the third axis.

Regarding claim 7, given the modification, the suspended structure **8** is capable of rotating about at least one of the first axis **A1** and the second axis **A2**.

Regarding claim 8, the load bearing structure **4** is capable of rotating about at least one of the first axis and the second axis.

Regarding claim 9, given the modification, the first circular member **8** and the second circular member **7** are not independently moveable.

Regarding claim 10, the coupling member **3a** is a circular hinge pin (the ends are circular thus rendering a circular hinge pin).

Regarding claim 15, the first and second circular members include a spherical outer surface to define a ball joint connection with corresponding interface surfaces of the load bearing structure and the suspended structure.

Regarding claim 20, Yoshioka discloses, in Figure 31, an assembly comprising a load bearing structure **1**, a suspended structure **8**, and a hinge pin **3a**. The load bearing structure **1** has a first circular member **4f** rotatable about a horizontal orientated first axis **A1** (see marked-up attachment). The first circular member **4f** has a first aperture **4fd**. The suspended structure **8** has a second circular member **4j** rotatable about a horizontally oriented second axis **A2**. The second circular member **4j** has a second

aperture **4jd**. The suspended structure **8** includes two plates **2** parallel to each other and configured to receive the load bearing structure **1** therebetween. Each of the two plates **2** cooperate with the load bearing structure **1** through spherical surfaces together defining a ball joint connection therebetween (col. 22, lines 8-11). The hinge pin **3a** is received in the first aperture **4fd** and the second aperture **4jd** to couple the suspended structure **8** to the load bearing structure **1** with the first axis A**1** adjacent to the second axis A**2**. The hinge pin **3a** is oriented along a third axis **A3** parallel and adjacent to the first axis A**1** and the second axis A**2**. The second axis **A2** is offset vertically upwards from the first axis **A1**.

However, Yoshioka fails to disclose the first and second circular members **4f**, **4j** unable to rotate with respect to one another about the third axis **A3**. Sugiyama et al. teach, in Figure 3, a first circular member **64** and second circular members **48**, **50** unable to rotate with respect to one another about a third axis (the axis of the shaft 54) to prevent a hinge pin **54** from rotating relative to the second circular member 48, 50 (col. 3, lines 28-32) and to have the hinge pin **54** rotate integrally with a first member **64** (col. 3, lines 56-59). Therefore, as taught by Sugiyama et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the first circular member and the second circular members unable to rotate with respect to one another about a third axis so that the second circular members and the first circular member rotate integrally with the hinge pin.

Regarding claim 22, Yoshioka discloses, in Figure 31, an assembly comprising a load bearing structure **1**, a suspended structure **8**, and a coupling member **3a**. The load bearing structure **1** has a first circular member **4f** rotatable about a horizontal orientated first axis **A1** (see marked-up attachment). The first circular member **4f** has a first aperture **4fd**. The suspended structure **8** has a second circular member **4j** rotatable about a horizontally oriented second axis **A2**. The second circular member **4j** has a second aperture **4jd**. The suspended structure **8** includes two plates **2** parallel to each other and configured to receive the load bearing structure **1** therebetween. Each of the two plates **2** cooperate with the load bearing structure **1** through spherical surfaces together defining a ball joint connection therebetween (col. 22, lines 8-11). The coupling member **3a** is received in the first aperture **4fd** and the second aperture **4jd** to couple the suspended structure **8** to the load bearing structure **1** with the first axis A**1** adjacent to the second axis A**2**. The coupling member **3**a is oriented along a third axis **A3** parallel and adjacent to the first axis A**1** and the second axis A**2**. The second axis **A2** is offset vertically upwards from the first axis **A1**.

However, Yoshioka fails to disclose the first and second circular members **4f**, **4j** unable to rotate with respect to one another about the third axis **A3**. Sugiyama et al. teach, in Figure 3, a first circular member **64** and second circular members **48**, **50** unable to rotate with respect to one another about a third axis (the axis of the shaft 54) to prevent a coupling member 54 from rotating relative to the second circular member

48, 50 (col. 3, lines 28-32) and to have the coupling member **54** rotate integrally with a first member **64** (col. 3, lines 56-59). Therefore, as taught by Sugiyama et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the first circular member and the second circular members unable to rotate with respect to one another about a third axis so that the second circular members and the first circular member rotate integrally with the coupling member.

Regarding claim 23, Yoshioka discloses, in Figure 31, an assembly comprising a load bearing structure **1**, a suspended structure **8**, and a coupling member **3a**. The load bearing structure **1** has a first circular member **4f** rotatable about a horizontal orientated first axis **A1** (see marked-up attachment). The first circular member **4f** has a first aperture **4fd**. The suspended structure **8** has a second circular member **4j** rotatable about a horizontally oriented second axis **A2**. The second circular member **4j** has a second aperture **4jd**. The suspended structure **8** includes two plates **2** parallel to each other and configured to receive the load bearing structure **1** therebetween. The first circular member **4f** and the second circular member **4j** include a spherical outer surface to define a ball joint connection with corresponding interface surfaces of the load bearing structure and the suspended structure (col. 22, lines 8-11). The coupling member **3a** is received in the first aperture **4fd** and the second aperture **4jd** to couple the suspended structure **8** to the load bearing structure **1** with the first axis A**1** adjacent to the second axis A**2**. The coupling member **3**a is oriented along a third axis **A3** parallel and adjacent to the first axis A**1** and the second axis A**2**. The second axis **A2** is

offset vertically upwards from the first axis **A1**. However, Yoshioka fails to disclose rotation prevention means provided between the coupling member **3a** and each of the first and second circular members **4f**, **4j** to prevent any relative rotation therebetween.

Sugiyama et al. teach, in Figure 3, rotation prevention means provided between a first circular member **64** and second circular members **48**, **50** to prevent a coupling member **54** from rotating relative to the second circular member **48**, **50** (col. 3, lines 28-32) and to have the coupling member **54** rotate integrally with a first member **64** (col. 3, lines 56-59). Therefore, as taught by Sugiyama et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide rotation prevention means between the first circular member and the second circular members so that the second circular member and the first circular member rotate integrally with the coupling member.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshioka, 4,026,572, in view of Sugiyama et al., 4,726,603, as applied to claims 7-10, 15, 19, 20, 22, and 23, and further in view of Buch, 3,529,790.

Regarding claim 5, Yoshioka, as modified, fails to disclose intermediate parts forming ball joint cages fixed in each of the two plates of the suspended structure and having internal spherical surfaces cooperating with external spherical surfaces of the second circular members. Buch teaches, in Figure 4a, intermediate parts 64 forming

ball joint cages fixed in each of the two plates of a suspended structure and having internal spherical surfaces cooperating with external spherical surfaces of second circular members 66 to retain the second circular members, i.e., the spherical circular members, in pivotal contact rather than being in direct spherical contact with the two plates. Therefore, as taught by Buch, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide additional intermediate parts forming ball joint cages fixed in each of the two plates of the suspended structure of Yoshioka to retain the second circular members in pivotal contact with intermediate parts rather than being in direct contact with the two plates as suggested by Yoshioka.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshioka, 4,026,572, in view of Sugiyama et al., 4,726,603, and further in view of Buch, 3,529,790.

Regarding claim 21, Yoshioka discloses, in Figure 31, an assembly comprising a load bearing structure **4**, a suspended structure **8**, a hinge pin **3a**, first parts **4j**, and a second part **4f**. The suspended structure has two plates **2** parallel with one another. The load bearing structure **5** is coupled to the suspended structure **8** and positioned between the two plates **2**. The first parts **4j** are rotatable about a first axis **A2**. The second part **4f** is rotatable about a second axis **A1**. The first parts 4j are in the plates 2 and cooperate with the plates win the suspended structure 8 through spherical surfaces

(col. 22, lines 8-11). The hinge pin **3a** has a hinge pin axis A3. The first axis A2 and the second axis A1 are parallel and offset from each other and the hinge pin axis.

However, Yoshioka fails to disclose the first and second circular members **4f**, **4j** unable to rotate with respect to one another about the third axis **A3** and Yoshioka fails to disclose intermediate parts forming ball joint cages fixed in each of the two plates of the suspended structure and having internal spherical surfaces cooperating with external spherical surfaces of the second circular members.

Sugiyama et al. teach, in Figure 3, a first circular member **64** and second circular members **48**, **50** unable to rotate with respect to one another about a third axis (the axis of the shaft 54) to prevent a hinge pin **54** from rotating relative to the second circular member 48, 50 (col. 3, lines 28-32) and to have the hinge pin **54** rotate integrally with a first member **64** (col. 3, lines 56-59). Therefore, as taught by Sugiyama et al., it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the first circular member and the second circular members unable to rotate with respect to one another about a third axis so that the second circular members and the first circular member rotate integrally with the hinge pin.

Buch teaches, in Figure 4a, intermediate parts 64 forming ball joint cages fixed in each of the two plates of a suspended structure and having internal spherical surfaces cooperating with external spherical surfaces of second circular members 66 to retain the

second circular members, i.e., the spherical circular members, in pivotal contact rather than being in direct spherical contact with the two plates. Therefore, as taught by Buch, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide additional intermediate parts forming ball joint cages fixed in each of the two plates of the suspended structure of Yoshioka to retain the second circular members in pivotal contact with intermediate parts rather than being in direct contact with the two plates as suggested by Yoshioka.

Claims 11 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshioka, 4,026,572, in view of Sugiyama et al., 4,726,603, as applied to claims 7-10, 15, 19, 20, 22, and 23, and further in view of Brilmyer, 5,580,201.

Regarding claim 11, Yoshioka, as modified, would have suggested the first aperture **4fd** and the second aperture **4jd** square, as part of a rotation prevention means, rather than being circular. Brilmyer teaches, in Figure 5, 6, 8, 9, other forms of rotation prevention means, being circular so that a coupling member **72** is prevented from rotating. Therefore, as taught by Brilmyer, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the first aperture and the second aperture being circular as shown in Figure 5 as part of a rotation prevention means thus preventing the coupling member from rotating with respect to the first and second circular members.

Regarding claim 24, Yoshioka, as modified, fails to disclose the rotation prevention means include splined provided between the circular hinge pin 3a and the first and second apertures **4fd**, **4jd**. Applicant is reminded that the used of splines to prevent rotation is well known in the art. Figure 5 in Brilmyer teaches the use of splines as a rotation prevention means instead of other configurations of preventing rotation. Therefore, as taught by Brilmyer, it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace the square openings, as modified by Sugiyama et al., with splines as these are equivalents and substitutable to prevent rotation.

Response to Arguments

Applicant's arguments with respect to claims 5, 7-11, 15, and 19-24 have been considered but are moot in view of the new grounds of rejection.

Conclusion

The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Borges, 6,350,074, shows a suspended structure with spherical members. Schumacher, DE-10,018,763, Douglas, EP-16270, and Reilly, WO95/18033, show a spherical cages and offset circular members.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ernesto Garcia whose telephone number is 571-272-7083. The examiner can normally be reached from 9:30AM-6:00PM. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached at 571-272-7087.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/E. G./
Examiner, Art Unit 3679

October 1, 2008
Attachment: one marked-up page of Yosioka, 4,026,572

/Daniel P. Stodola/
Supervisory Patent Examiner, Art Unit 3679

Yosioka, 4,026,572

FIG. 31